

Kentucky Method 64-426-0509  
Revised 12/28/04 5/27/09  
Supersedes KM 64-426-0205  
Dated 12/13/01 12/28/04

## REQUIREMENTS FOR PROCESS-CONTROL TESTING AND INSPECTION OF ASPHALT MIXTURES BY THE CONTRACTOR

### 1. SCOPE -

- 1.1. This method lists the Contractor's process-control responsibilities for asphalt mixtures.
- 1.2. Perform all testing for process-control and informational purposes according to the applicable Kentucky Method (KM) or AASHTO standard.
- 1.3. According to Subsection 402.02 of the Department's *Standard Specifications for Road and Bridge Construction*, provide a Superpave Plant Technologist (SPT) to perform the initial plant setup for each mixture, set the job-mix formula (JMF) at the mixing plant, and conduct all tests to verify that the plant is producing a mixture within the specified tolerances.
- 1.4. According to Subsection 402.02 of the Department's *Standard Specifications*, provide a Superpave Mix Design Technologist (SMDT) to ~~make all necessary changes in the JMF~~ adjust mix designs as needed. The SPT may perform these changes under the direction of the SMDT. If deemed appropriate by the Department, repeat any inspection, process-control testing, sampling or sample preparation, etc., necessary to ensure that the mixture supplied meets the applicable requirements.

### 2. EQUIPMENT AND PROCEDURES - The equipment and procedures necessary to fulfill the requirements of this method are described in the following KM's and AASHTO standards:

- |           |  |
|-----------|--|
| KM 64-401 | <i>Calibrating and Checking Cold-Feed Flow on Asphalt Mixing Plants</i>                                  |
| KM 64-404 | <i>Sampling Liquid Asphalt Materials</i>   |
| KM 64-405 | <i>Extraction of Binder From Asphalt Paving Mixtures</i>   |
| KM 64-407 | <i>Sieve Analysis of Aggregate From Asphalt Mixing Plants</i>  |
| KM 64-411 | <i>Preparing Ingredient Materials for, and Performing, a Laboratory Mix Design of an Asphalt Mixture</i> |
| KM 64-421 | <i>Establishing the Job-Mix Formula of Asphalt Mixtures by the Contractor</i>                            |
| KM 64-425 | <i>Sampling Asphalt Mixtures</i>   |
| KM 64-433 | <i>Wet-Sieve Analysis of Aggregates Used in Asphalt Mixtures</i>   |
| KM 64-434 | <i>Determination of Moisture Content in Asphalt Mixtures (Rapid Field Test)</i>                          |

KM 64-435	<i>Method for Acceptance of Asphalt Mixtures by Mixture Property Analysis</i>
KM 64-436	<i>Asphalt Binder Content Determination of Asphalt Mixtures by Plant Recordation</i>
KM 64-437	<i>Determination of Asphalt Binder Content of Asphalt Mixtures Using the Nuclear Asphalt Content Gauge</i>
KM 64-438	<i>Asphalt Binder Content Determination of Asphalt Mixtures Based on the Maximum Specific Gravity</i>
KM 64-439	<i>Sampling Asphalt Mixtures From the Paving Site</i>
KM 64-442	<i>Method for Coring and Determining Percent of Solid Density of In-Place, Compacted, Asphalt Mixture Courses</i>
KM 64-620	<i>Wet Sieve Analysis of Fine and Coarse Aggregate</i>
AASHTO R 35	<i>Superpave Volumetric Design for Hot-Mix Asphalt (HMA)</i>
AASHTO T 2	<i>Sampling of Aggregates</i>
AASHTO T 27	<i>Sieve Analysis of Fine and Coarse Aggregates</i>
<u>AASHTO</u> <u>T 166</u>	<u><i>Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens</i></u>
<u>AASHTO</u> <u>T 209</u>	<u><i>Theoretical Maximum Specific Gravity and Density of Hot Mix Asphalt (HMA)</i></u>
AASHTO T 308	<i>Determining the Asphalt Binder Content of Hot-Mix Asphalt (HMA) by the Ignition Method</i>
<u>AASHTO</u> <u>T 312</u>	<u><i>Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor</i></u>

### 3. PROCESS-CONTROL TESTING -

- 3.1. At the beginning of the construction season, submit a Quality Control Plan (QCP) to the appropriate District Materials ~~Engineer~~ Section Supervisor (DME) for approval for each plant using the TC 64-418 form, *Contractor's Quality Control Plan/Checklist*. The TC 64-418 form is available on the Division of Materials website

[transportation.ky.gov/materials/asphaltmixtures.htm](http://transportation.ky.gov/materials/asphaltmixtures.htm)). This document details sampling, process-control testing, inspection, and the anticipated frequencies of each.

- 3.2. If changes in an approved QCP become necessary or desirable, submit a revised plan for approval.
- 3.3. Furnish all necessary resources (equipment, personnel, etc.) to comply with the Department's *Standard Specifications*, other contract requirements, and approved QCP.
- 3.4. See Addendum 1 for a list of the SPT's duties that are to be performed routinely.
- 3.5. For all projects, perform the following tests and checks at the minimum frequencies listed below:

3.5.1. All Superpave mixtures

Minimum frequencies

Cold-feed checks  
(when ~~using~~ polish-resistant aggregate **is required**)

Two daily (a. m./p. m.)

Wet-sieve analysis

One during first sublot (setup period);  
one per lot thereafter

3.5.2. Specialty mixtures

Minimum frequencies

Open-Graded Friction Course (OGFC),  
Scratch Course, Sand Asphalt, Sand Seal  
Surface

Cold-feed checks  
(when ~~using~~ polish-resistant aggregate **is required**)

Two daily (a. m./p. m.)

3.5.3. All Mixtures

Minimum frequencies

Temperature checks of asphalt mixture

Hourly

Temperature checks of performance-  
graded (PG) binder ~~and aggregate~~

Four daily (two in  
a. m./**two in** p. m.). ~~Retain PG  
binder and aggregate charts for a one-  
year period for review by the  
Department.~~

~~NOTE 1: For drum plants, in lieu of aggregate readings and charts, monitor the  
temperature at the discharge chute from the drum.~~

4. RECOMMENDED PRACTICES -

- 4.1. Develop a process-control testing program in keeping with the specific considerations at each plant site.

4.2. In addition to the acceptance tests required in Subsection 402.03.02 of the Department's *Standard Specifications*, the Department recommends, but does not require, the following minimum process-control tests and frequencies:

4.2.1. Perform one gradation determination, corresponding to the volumetric analysis for acceptance, per subplot.

4.2.2. During the setup period of Compaction Option A projects, determine the correlation between core density and the density meter reading. Perform one density determination for every 1200 ~~sq.-yd.~~<sup>yd<sup>2</sup></sup> of surface area of mainline pavement thereafter using a density meter.

## 5. INSPECTION AND DOCUMENTATION -

5.1. In addition to process-control testing, perform the required plant and site inspection during production.

5.2. Document, and maintain a file of, all process-control tests and inspections. Document daily general observations, adjustments made to the mixture, and the results of all other inspections completed.

5.3. Keep, and update daily, control charts for all process-control, acceptance, and verification test results using the appropriate features of the Asphalt Mixtures Acceptance Workbook (AMAW).

6. ADDITIONAL TESTING BY THE DEPARTMENT - ~~The Department reserves the right~~ As specified in Subsection 106.02 of the Department's *Standard Specifications*, when unusual circumstances arise or results of normal testing indicate the need for further testing, ~~to the~~ Department may sample at any point and ~~to~~ perform any additional or special tests necessary to determine if the material is suitable for its intended use.

## ADDENDUM 1

### DUTIES OF CONTRACTOR'S SPT

1. Check with the DME to ensure the plant has been certified and accepted by the DME.

2. Check the laboratory for the necessary equipment and proper accreditation records as required by the applicable specifications.

3. Check the contract documents for the correct grade of PG binder and for specifications pertaining to the asphalt mixtures involved.

4. Provide an approved copy of the JMF on an "Asphalt-Mixture-Design Results" form, or "MixPack" spreadsheet (including the random sampling tonnages for acceptance testing), -from the Department at the asphalt plant field laboratory.

5. Provide an approved QCP (TC 64-418) on file at the field laboratory.

6. Perform visual inspection of all stockpiles to prevent contamination with other aggregates, dirt, and debris.
7. Check the bill-of-lading that accompanies each transport of PG binder for the type of material, approval number ("lot number"), county, project number, and signature of the certifying agency and supplier.
8. Maintain a file of all bills-of-lading for PG binder and tack material for a minimum of one year.
9. Check the use and rate of silicone, ~~and~~ anti-stripping additive, fibers, or other specialty products when utilized in the asphalt mixture.
10. When requested by Department personnel, obtain acceptance samples of the PG binder.
11. Furnish two "hand-mixed" maximum specific gravity samples upon completion of the set-up period according to KM 64-438.
12. Perform visual inspection of the ~~scale~~plant settings ~~and mixing time~~.
13. Check all truck beds to ensure all trucks have tarps and contain no contaminating material or unapproved release agent prior to loading them with asphalt mixture.
14. Inspect the loading of trucks to ensure that the asphalt mixture is being loaded in multiple drops using the "front-back-middle of the bed" sequence in order to minimize segregation. Do not allow trucks to be loaded by "dribbling" the asphalt mixture into the bed or by "topping off" the bed.
- ~~14.~~15. Fill out the AMAW (~~Asphalt Mixtures Acceptance Workbook~~) completely (example copy attached), and submit the spreadsheet to the Department within five working days of the completion of each lot.
- ~~15.~~16. Complete all control charts documenting process-control, acceptance, and verification testing results daily using the appropriate features of the AMAW.
- ~~16.~~17. Record the time, truck or ticket numbers, and temperature of the asphalt mixture from which the test samples are taken on the AMAW.
- ~~17.~~18. Maintain familiarity with the KM's and AASHTO standards that pertain to asphalt quality control and asphalt mixture testing.
- ~~18.~~19. Maintain familiarity with all applicable specifications that pertain to acceptance, process-control, or quality-control testing responsibilities.
- ~~19.~~20. ~~Keep a copy~~Provide current copies of the ~~current SPT Qualification Course manual; KM manual~~applicable KM's; AASHTO *Standard Specifications for Transportation Materials and Methods of Sampling and Testing* (Part 1, Specifications, and Part 2, Tests); ~~AASHTO Provisional Standards~~; and the Department's *Standard Specifications* at the plant site at all times.

APPROVED

DIRECTOR  
DIVISION OF MATERIALS

DATE

5/27/09

Kentucky Method 64-426-0509

Revised ~~12/28/04~~ 5/27/09

Supersedes KM 64-426-0205

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Attachments

km426059.doc

KM-426-0509

**PAY VALUE (%) PER LOT**  
**CONTROL AND ACCEPTANCE OF ASPHALT MIXTURES**

Sample ID:	10414ABC080012	Item Code:	0336	Lot #:	2	County:	Blanton
Contract I.D.	091111			TONS in Lot	4000.00	ESAL Class:	3
Type Mix:	Superpave 0.38	Mix used for:	Mainline	Unit Price (\$):	50.00	KYTC Lab ID:	T415
Producer/Supplier Code:	Hot'n Black Paving @ Kennedyville			Acceptance Method:	P/S Lab ID: C333		
Density Options	Approved Mix Design: 00640AMD079999			Volumetrics	Approval Authorized By		
<input checked="" type="radio"/> Option A	Matl. Code: 00336 CL3 ASPH SURF 0.38A PG76-22				Name: Willie Carrier		
<input type="radio"/> Option B					ID: wcarrier		

Binder Content				Air Voids			VMA			
JMF % AC	Sublot % AC	Deviation from JMF	Pay Value (%)	Target (%)	Sublot % AV	Pay Value (%)	Min. % VMA	Sublot % VMA	Deviation from Min.	Pay Value (%)
5.7	5.6	-0.1	100.0	4.0	2.5	95.00	15.0	14.0	-1.0	90.0
5.7	6.0	0.3	100.0	4.0	2.9	99.00	15.0	14.6	-0.4	95.0
5.7	5.7	0.0	100.0	4.0	3.3	103.00	15.0	14.6	-0.4	95.0
5.7	5.5	-0.2	100.0	4.0	4.0	105.00	15.0	14.7	-0.3	95.0
Lot Average			100.00	Lot Average		100.50	Lot Average			93.75

Density	
Sublot Avg.	Pay Value (%)
Joint Density	100.0
LaneDensity	100.31

Property	% Pay
Joint Density	15
Lane Density	30
% AC	5
% AV	25
% VMA	25

Final Pay Values And Adjustments	
Pavement Wedge Tons**	
Final Pay Value Mainline (%)	98.66
For Lot #	2
Lot Tonnage Adjustment	-53.750
Lot Pay Adjustment (\$)	-2687.500

\*\* Only necessary when placed Monolithically  
with Mainline

Aggregate Information				
Aggr. Prod. Name	Aggr. Code #	Matl. Type & Size	Matl. Code #	%
Hard & Brittle Stone Company	AGP062901	Dolomite #8's Class A	10400	20
Green Valley Rock	AGP073501	LS #8's Class A	10400	20
Green Valley Rock	AGP073501	LSS (Washed)	10310	40
Muddy River Sand, Inc.	AGP057202	Natural Sand	10436	20

Pay Values for Acceptance by Gradation and Asphalt Binder Content					Sublot Verified		Verification Results			
Sublot	Target JMF or FM	Test Result	Deviation	Pay Value	<input checked="" type="radio"/> Sublot # 1	<input type="radio"/> Sublot # 2	Test	Results	1 vs. 1	1 vs. 3
1					<input type="radio"/> Sublot # 3	<input type="radio"/> Sublot # 4	% AC	5.6	0.1	0.1
2					<input checked="" type="checkbox"/> Same Equipment		% AV	1.5	-1.0	*1.9
3							% VMA	13.5	-0.4	1.1
4					Sublot Verified		Verification Results			
Lot Average					<input type="radio"/> Sublot # 1	<input type="radio"/> Sublot # 2	Test	Results	1 vs. 1	1 vs. 3
PG-Binder Info.					<input type="radio"/> Sublot # 3	<input checked="" type="radio"/> Sublot # 4	% AC	5.7	0.2	0.1
PG-Binder Lot #'s	QWK3520522	QWK3520522	QWK3520522	QWK3520522	<input checked="" type="checkbox"/> Same Equipment		% AV	4.2	0.2	-1.3
Tack Oil Lot #'s	ROK3463600	ROK3463600	ROK3463600	ROK3463600			% VMA	15.1	0.4	-0.7
PG-Grade	Manufacturer	% & Type Additive (if used)			Sublot Verified By					
PG 76-22	LAP100201	0.5% Stick-2-it Plus			Name	Willie Carrier	ID #	wcarrier		

[illegible]



Sample ID: 10414ABC080012 County: Blanton  
Contract I.D. 091111  
Type Mix: Superpave 0.38

Sublot # 1 Tested by	Sublot # 2 Tested by
claird	claird
Sublot # 3 Tested by	Sublot # 4 Tested by
claird	claird

RANDOM TONS FOR EACH SUBLLOT						AGGREGATE:			Sublot # 1	Sublot # 2	Sublot # 3	Sublot # 4
Sublot	Date	Time	Truck #	Tons	Temp	Agg. Prod. Code	Matt. Type & Size	Sp. Grav.	%	%	%	%
1	05/22/09	8:20 AM	555	369.00	335	AGP062901	Dolomite #8's Class A	2.67	19.0	22.0	21.0	22.0
2	05/22/09	2:25 PM	222	1456.00	326	AGP073501	LS #8's Class A	2.68	21.0	18.0	20.0	18.0
3	05/23/09	9:30 AM	396	2766.00	330	AGP073501	LSS (Washed)	2.65	42.0	42.0	37.0	40.0
4	05/24/09	10:00 AM	400	3540.00	330	AGP057202	Natural Sand	2.60	18.0	18.0	22.0	20.0

G<sub>se</sub>  
2.728

Sublot G<sub>ab</sub> 2.65 2.65 2.65 2.65

Sublot # 1 Sample #	% AC (Mix)	Weight (g)			Bulk Vol.	BSG	Unit Wt.	Max Spec Gravity	% Voids	% Abs. AC (Mix)	% Eff. AC	% VMA	% VFA	D/A Ratio
		(Air)	(Water)	(SSD)										
1		4812.1	2823.0	4815.4	1992.4	2.415								
2		4808.4	2821.6	4811.7	1990.1	2.416								
Average	5.6					2.416	150.7	2.477	2.5	1.04	4.5	14.0	82.4	1.4

Sublot # 2 Sample #	% AC (Mix)	Weight (g)			Bulk Vol.	BSG	Unit Wt.	Max Spec Gravity	% Voids	% Abs. AC (Mix)	% Eff. AC	% VMA	% VFA	D/A Ratio
		(Air)	(Water)	(SSD)										
1		4811.3	2817.3	4813.2	1995.9	2.411								
2		4805.5	2811.4	4808.4	1997.0	2.406								
Average	6.0					2.409	150.3	2.481	2.9	1.04	5.0	14.6	80.1	1.3

Sublot # 3 Sample #	% AC (Mix)	Weight (g)			Bulk Vol.	BSG	Unit Wt.	Max Spec Gravity	% Voids	% Abs. AC (Mix)	% Eff. AC	% VMA	% VFA	D/A Ratio
		(Air)	(Water)	(SSD)										
1		4804.3	2809.8	4811.0	2001.2	2.401								
2		4800.7	2806.1	4808.3	2002.2	2.398								
Average	5.7					2.400	149.7	2.483	3.3	1.06	4.7	14.6	77.1	0.8

Sublot # 4 Sample #	% AC (Mix)	Weight (g)			Bulk Vol.	BSG	Unit Wt.	Max Spec Gravity	% Voids	% Abs. AC (Mix)	% Eff. AC	% VMA	% VFA	D/A Ratio
		(Air)	(Water)	(SSD)										
1		4807.6	2804.9	4812.2	2007.3	2.395								
2		4799.9	2804.3	4811.6	2007.3	2.391								
Average	5.5					2.393	149.3	2.493	4.0	1.05	4.5	14.7	72.6	0.7

POLISH RESISTANT DATA		
Date	% Coarse	% Fine
05/22/09	39	18
05/23/09	43	20
05/23/09	42	20

Gyrations	
@ N <sub>ses</sub>	75

Maximum Specific Gravity									Hand-Mixed		
	Sublot #1a	Sublot #1b	Sublot #2a	Sublot #2b	Sublot #3a	Sublot #3b	Sublot #4a	Sublot #4b	Maximum Specific Gravities		
Wt. of Mix	1530.5	1528.8	1557.9	1560.3	1544.9	1533.8	1584.7	1577.3	Wt. of Mix	1612.6	1586.1
Calibration	1375.9	1375.9	1375.9	1375.9	1375.9	1375.9	1375.9	1375.9	Calibration	1416.5	1416.5
Wt. of Mix + Calibrat.	2906.4	2904.7	2933.8	2936.2	2920.8	2909.7	2960.6	2953.2	Wt. of Mix + Calibrat.	3029.1	3002.6
Final Wt.	2288.2	2287.4	2305.4	2307.5	2297.1	2293.1	2323.6	2321.9	Final Wt.	2381.5	2367.4
Absorbed Water									Absorbed Water		
MSG	2.476	2.477	2.479	2.482	2.477	2.488	2.488	2.498	MSG	2.490	2.497
Avg. =	2.477		2.481		2.483		2.493		Avg. =	2.494	
									% AC =	5.7	

		Sublot # 1	Sublot # 2	Sublot # 3	Sublot # 4
Moisture Content of Mixture	Weight of Pan and Mixture before Drying	2420.3	2911.2	2911.2	2911.2
	Weight of Pan and Mixture after Drying	2418.7	2909.6	2909.6	2909.6
	Weight of Pan	1100.7	1100.7	1100.7	1100.7
	% Moisture in Mix	0.1	0.1	0.1	0.1

Sample ID#:	10414ABC080012	Inspectors ID # :	wcarrier
Contract ID:	091111	Inspectors Name:	Willie Carrier
Type Mixture:	Superpave 0.38	Producer & Location:	Hot 'n Black Paving @ Kennedyville

CORE DENSITIES									
Core Number	Station #/ Offset/ Coarse #	MSG of Sublot	Core Wt. In Air (g)	Core Wt. In Water (g)	Core Wt. SSD (g)	Bulk Sp. Gravity	Core Density (kg/m <sup>3</sup> )	% Solid Density (%)	Pay Value (%)
2-1-A	1+23 6'R	2.477	708.1	415.8	727.0	2.275	142.0	91.9	95
2-1-B	3+47 4'R		711.6	418.3	725.9	2.313	144.4	93.4	100
2-1-C	4+12 3'L		720.1	422.1	730.3	2.336	145.8	94.3	105
2-1-D	6+78 7'L		701.2	419.0	719.8	2.331	145.5	94.1	105
Sublot Average									101.3
2-2-A	6+83 1'R	2.481	725.8	410.0	729.9	2.269	141.6	91.5	95
2-2-B	8+20 6'L		732.1	421.3	740.2	2.296	143.3	92.6	100
2-2-C	9+31 1'L		703.6	418.5	714.7	2.375	148.2	95.8	105
2-2-D	10+11 8'L		714.5	426.1	733.6	2.324	145.0	93.7	100
Sublot Average									100.0
2-3-A	11+39 2'R	2.483	692.4	408.2	710.7	2.289	142.8	92.2	100
2-3-B	13+00 3'L		713.5	414.5	722.6	2.316	144.5	93.3	100
2-3-C	13+95 3'R		729.4	420.9	739.2	2.292	143.0	92.3	100
2-3-D	15+02 7'R		710.1	409.3	715.8	2.317	144.6	93.3	100
Sublot Average									100.0
2-4-A	16+77 1'L	2.493	713.6	411.2	720.6	2.306	143.9	92.5	100
2-4-B	17+23 10'L		680.5	399.6	693.6	2.315	144.4	92.8	100
2-4-C	18+08 3'L		720.0	413.8	730.0	2.277	142.1	91.3	95
2-4-D	18+75 5'L		693.5	411.7	705.7	2.359	147.2	94.6	105
Sublot Average									100.0
Lot Average									100.31

Joint Cores									
2-1-J1	2+22	2.477	728.6	418.3	742.2	2.249	140.4	90.8	100
2-1-J2	5+68		677.5	389.6	694.8	2.220	138.5	89.6	100
Sublot Average									100.0
2-2-J1	7+12	2.481	728.6	418.3	742.2	2.249	140.4	90.7	100
2-2-J2	9+42		677.5	389.6	694.8	2.220	138.5	89.5	100
Sublot Average									100.0
2-3-J1	12+07	2.483	728.6	418.3	742.2	2.249	140.4	90.6	100
2-3-J2	13+81		677.5	389.6	694.8	2.220	138.5	89.4	100
Sublot Average									100.0
2-4-J1	17+87	2.493	728.6	418.3	742.2	2.249	140.4	90.2	100
2-4-J2	18+13		677.5	389.6	694.8	2.220	138.5	89.0	100
Sublot Average									100.0
Lot Average									100.00

Date Tested			
Sublot # 1	5/23/09	Sublot # 3	5/24/09
Sublot # 2	5/23/09	Sublot # 4	5/25/09

Sample ID: 10414ABC080012      Producer & Location: Hot 'n Black Paving @ Kennedyville  
 Contract I.D. 091111  
 Type Mixture: Superpave 0.38

Gyrations	
@ N <sub>des</sub>	75

Sublot # : 1      Inspectors ID # : wcarrier      Inspectors Name: Willie Carrier

Sample #	% AC (Mix)	Weight (g)			Bulk Vol.	BSG	Unit Wt.	Max Spec Gravity	% Voids	% Eff. AC	% VMA	% VFA	D/A Ratio
		(Air)	(Water)	(SSD)									
1		4812.1	2834.7	4815.4	1980.7	2.429							
2		4808.4	2830.1	4810.0	1979.9	2.429							
Average	5.6					2.429	151.6	2.465	1.5	4.6	13.5	89.1	1.4

Sublot # : 4      Inspectors ID # : wcarrier      Inspectors Name: Willie Carrier

Sample #	% AC (Mix)	Weight (g)			Bulk Vol.	BSG	Unit Wt.	Max Spec Gravity	% Voids	% Eff. AC	% VMA	% VFA	D/A Ratio
		(Air)	(Water)	(SSD)									
1		4820.7	2820.6	4839.2	2018.6	2.388							
2		4811.3	2811.7	4831.1	2019.4	2.383							
Average	5.7					2.385	148.8	2.490	4.2	4.6	15.1	72.0	0.7

	Sublot #1a	Sublot #1b	Sublot #4a	Sublot #4b
Wt. of Mix	1555.9	1528.8	1521.3	1550.6
Calibration	1401.2	1401.2	1401.2	1401.2
Wt. of Mix + Calibrat.	2957.1	2930.0	2922.5	2951.8
Final Wt.	2326.4	2309.5	2311.4	2329.4
Absorbed Water				
MSG	2.467	2.464	2.489	2.491
Avg. =	2.465		2.490	

Binder Content Verif. Sublot # 1		Binder Content Verif. Sublot # 4	
Printed Ticket		Printed Ticket	
As Tested % AC: 5.7		As Tested % AC: 5.7	
Act. % AC for Verif.: 5.6		Act. % AC for Verif.: 5.7	
% AC by Back-Calc. = 6.5		% AC by Back-Calc. = 5.8	

Sieve Size	Verif. for Sublot #1			Verif. for Sublot #4		
	Verification Gradation			Verification Gradation		
	Grams Retained	Percent Retained	Percent Passing	Grams Retained	Percent Retained	Percent Passing
2 "						
1 1/2 "						
1 "						
3/4 "						
1/2 "	0.0	0.0	100.0	0.0	0.0	100.0
3/8 "	136.0	3.8	96.2	112.7	3.4	96.6
1/4 "						
# 4	455.8	12.6	87.4	408.3	12.2	87.8
# 8	2109.7	58.3	41.7	1986.4	59.5	40.5
# 16	2563.2	70.8	29.2	2373.3	71.0	29.0
# 30	2874.8	79.4	20.6	2599.9	77.8	22.2
# 50	3018.6	83.3	16.7	2837.7	84.9	15.1
# 100						
# 200	3432.5	94.8	5.2	3131.4	93.7	6.3
PAN						
Total	3621.8			3341.0		

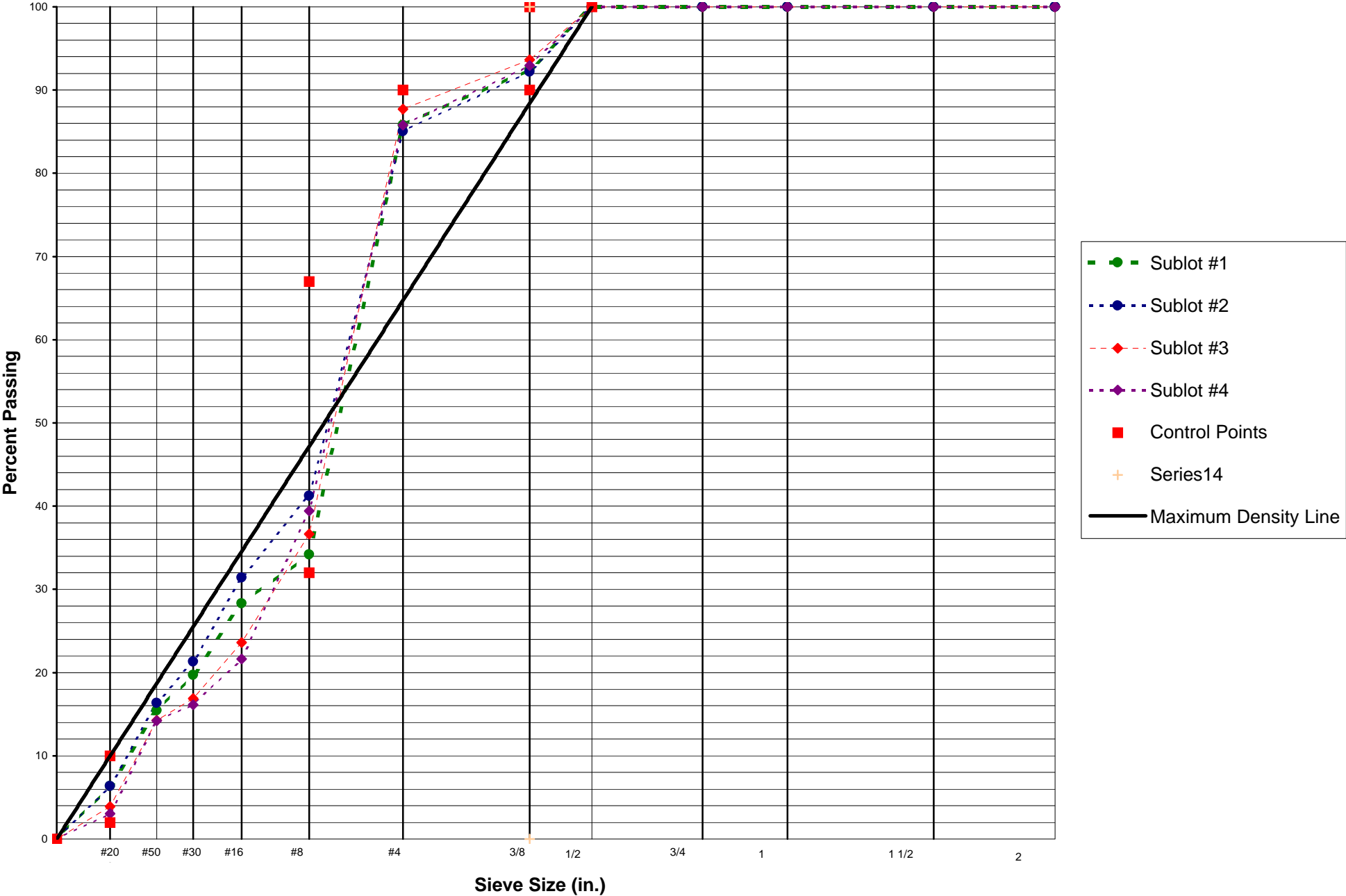
Moisture Content of Mixture		
	Sublot #1	Sublot #4
Weight of Pan and Mixture before Drying	3443.0	3218.3
Weight of Pan and Mixture after Drying	3441.6	3217.9
Weight of Pan	1100.7	1100.7
% Moisture in Mix	0.1	0.0

Sample ID: 10414ABC080012  
 Contract I.D. 091111  
 Type of Mixture: Superpave 0.38

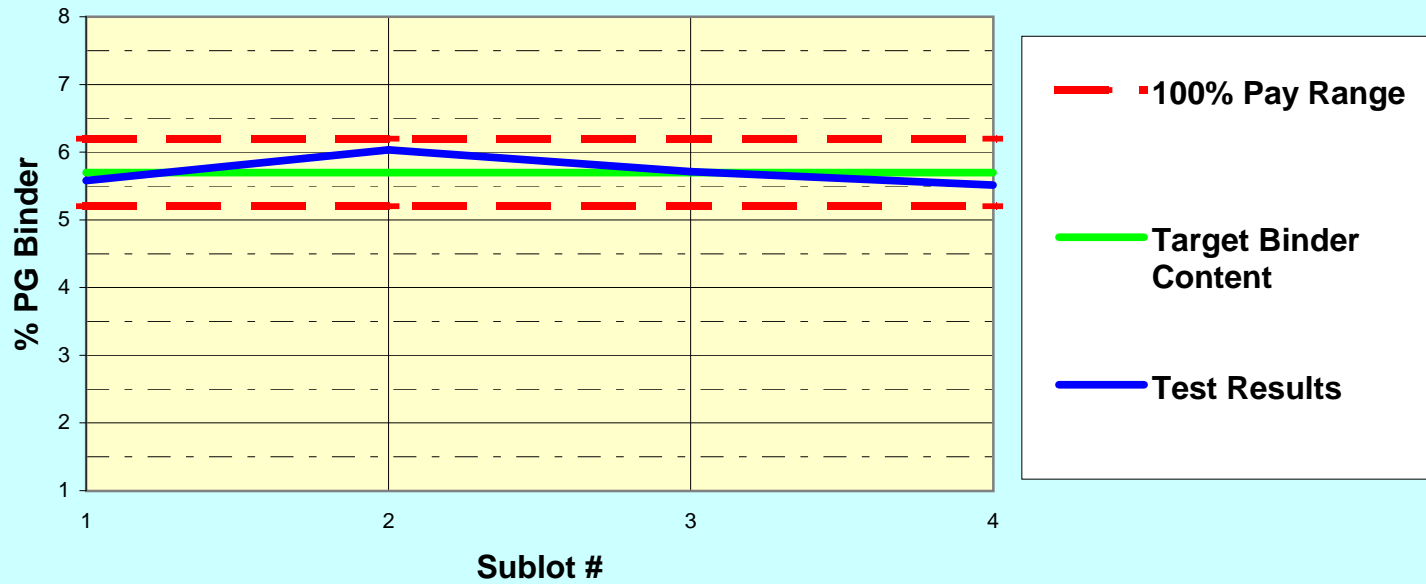
Inspectors ID #: claird  
 Inspectors Name: Cary Laird  
 Producer & Location: Hot 'n Black Paving @ Kennedyville

Date Tested: 05/22/09				Date Tested: 05/22/09			Date Tested: 05/23/09			Date Tested: 05/24/09			
SUBLOT # 1				SUBLOT # 2			SUBLOT # 3			SUBLOT # 4			
Sieve Size	Grams Retained	Percent Retained	Percent Passing	Grams Retained	Percent Retained	Percent Passing	Grams Retained	Percent Retained	Percent Passing	Grams Retained	Percent Retained	Percent Passing	
2 "													
1 1/2 "													
1 "													
3/4 "													
1/2 "	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	
3/8 "	267.4	7.5	92.5	298.7	7.8	92.2	220.0	6.3	93.7	248.3	7.1	92.9	
1/4 "													
# 4	504.9	14.2	85.8	571.5	15.0	85.0	427.5	12.3	87.7	499.7	14.2	85.8	
# 8	2334.3	65.8	34.2	2245.9	58.8	41.2	2201.4	63.4	36.6	2127.3	60.6	39.4	
# 16	2543.8	71.7	28.3	2621.0	68.6	31.4	2654.7	76.4	23.6	2751.6	78.4	21.6	
# 30	2847.8	80.3	19.7	3006.6	78.7	21.3	2888.4	83.1	16.9	2943.9	83.9	16.1	
# 50	2998.8	84.5	15.5	3196.3	83.7	16.3	2978.9	85.7	14.3	3012.2	85.8	14.2	
# 100													
# 200	3321.6	93.6	6.4	3577.8	93.6	6.4	3338.9	96.1	3.9	3404.4	97.0	3.0	
Pan													
Total	3547.2			3820.9			3474.3			3510.6			
Printed Ticket ▼				Extraction ▼			Ignition Furnace ▼			NACG ▼			
				Wt. of Bowl: 2388.6									
				Wt. of Bowl & Sample: 5821.5									
				Pad Gain: 12.4									
				Wt. of Dry Agg.: 3210.3									
As Tested % AC: 5.7				As Tested % AC: 6.1			As Tested % AC: 5.8			As Tested % AC: 5.6			
Act. % AC for Accept.: 5.6				Act. % AC for Accept.: 6.0			Act. % AC for Accept.: 5.7			Act. % AC for Accept.: 5.5			
% AC by Back-Calc. = 6.2				% AC by Back-Calc. = 6.0			% AC by Back-Calc. = 6.0			% AC by Back-Calc. = 5.7			

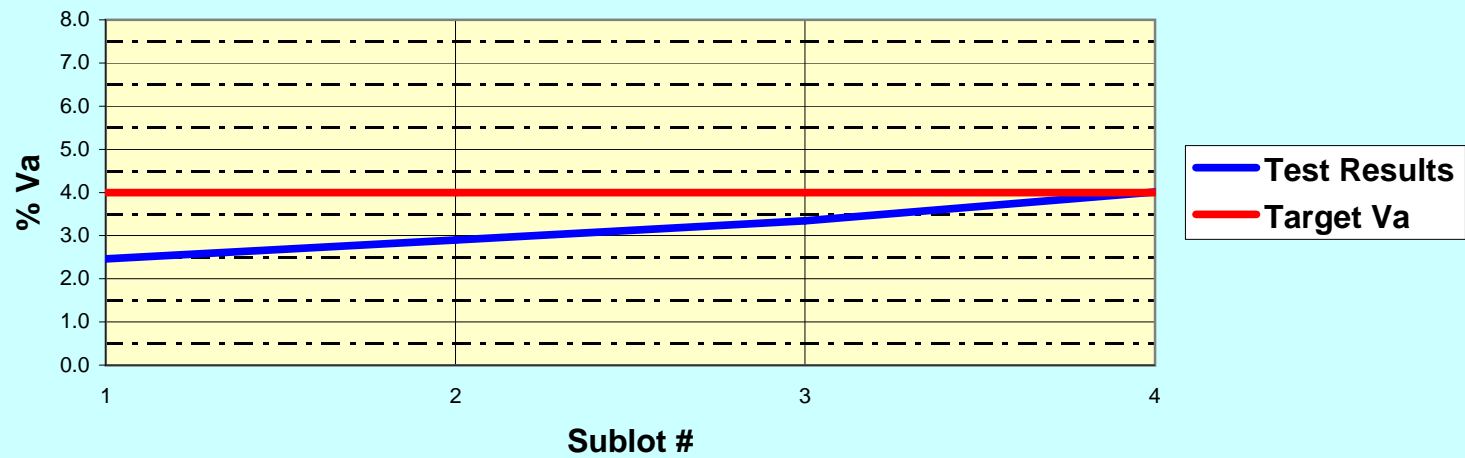
Superpave Mixtures ( Gradation Analysis )



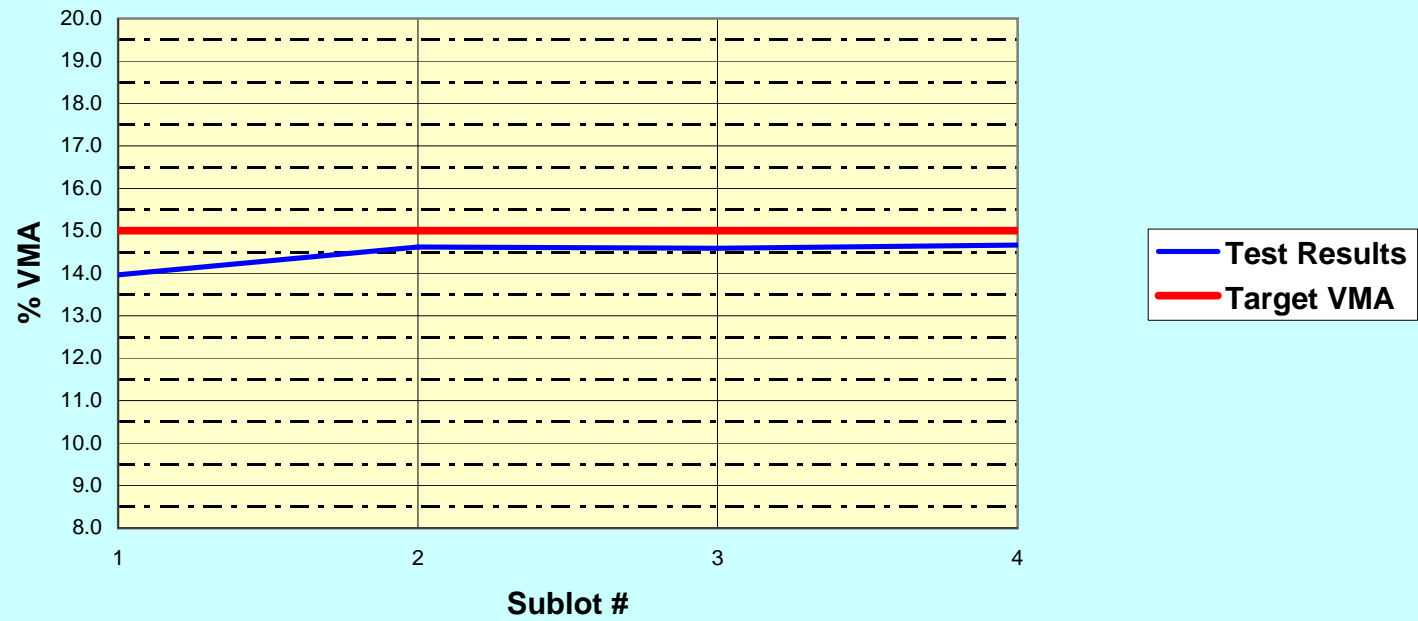
**PG Binder Test Results**



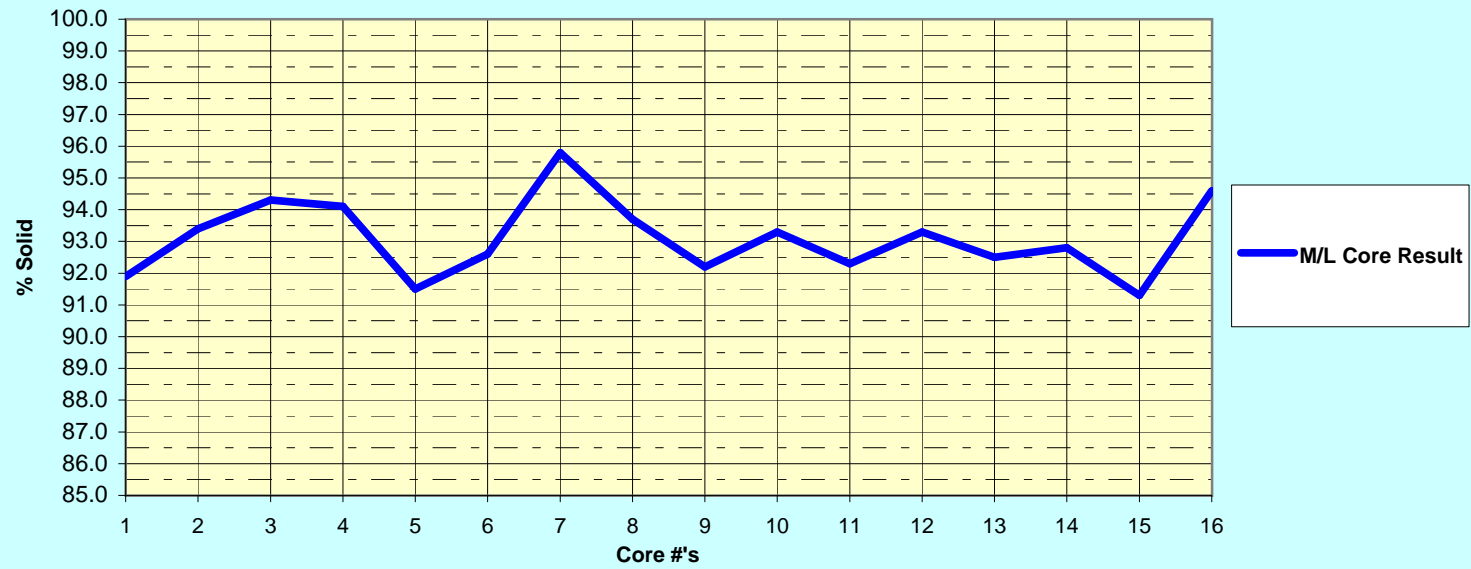
**% Air Voids**



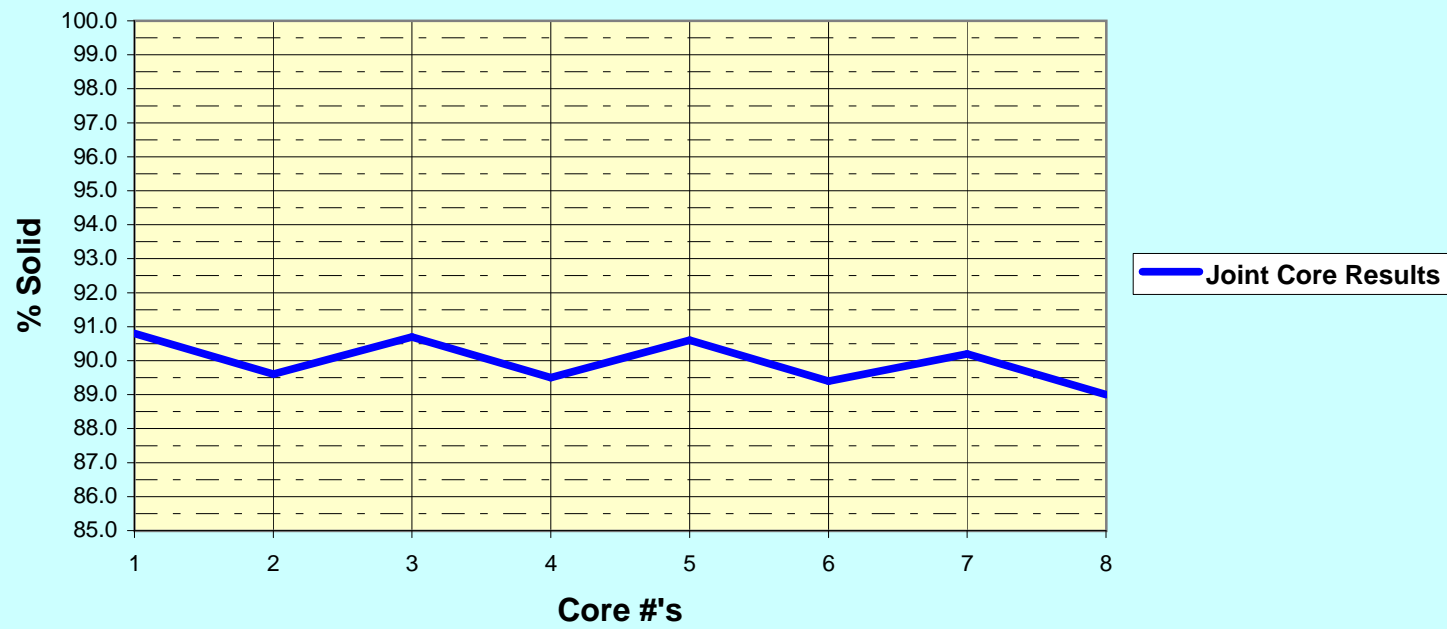
### VMA



### Density



### Joint Density





# COMMENTS

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**Please include any comments concerning Volumetric Properties or Densities for the subject mixture.**

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Please include any comments concerning Volumetric Properties or Densities for the subject mixture.